



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/781,880	02/20/2004	Tien-Ming Hsu	176-101	4240
23552	7590	12/21/2007		
MERCHANT & GOULD PC P.O. BOX 2903 MINNEAPOLIS, MN 55402-0903			EXAMINER GODBOLD, DOUGLAS	
			ART UNIT 2626	PAPER NUMBER
			MAIL DATE 12/21/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/781,880

Applicant(s)

HSU, TIEN-MING

Examiner

Douglas C. Godbold

Art Unit

2626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is in response to correspondence filed October 5, 2007 in reference to application 10/781,880. Claims 1-16 are pending in the application and have been examined.

Response to Arguments

2. Applicant's arguments filed October 5, 2007 have been fully considered but they are not persuasive.

3. With respect to applicant's arguments, see Remarks page 2 and 3, that the APA in view of Smith fails to disclose or suggest "calculating an idle time between a current input voice signal and a previous input voice signal" as recited in claim 1 of the present application and that the semantic recognition remains enable until the calculated idle time is larger than the predetermined threshold, the examiner respectfully disagrees.

The applicant contends that the time in Smith is calculated upon the initiation of the wait state, without reference to a previous input signal. However this is not the case. The wait state of Smith is entered only after a key word is recognized, paragraph 0057. Paragraph 0060 describes that this wait state will last a predetermined amount of time and if no input is received will revert the system to await another attention key word. As this wait state is entered only after a key word is recognized, the calculation of the idle time is based off of when the key was recognized, which is a previous voice signal. Further, step 625 of figure 6 shows that if a command is detected but not

recognized, the system returns to the wait state. This would be another example of calculating the idle time based on a previous voice input. Although a sound to acknowledge that a keyword has been entered may be played, this is a matter of design, and could easily be omitted all together.

The applicant further contends that Smith fails to disclose or suggest that the semantic recognition remains enable until the calculated idle time is larger than the predetermined threshold. However, the wait state of Smith is much the same as the semantic recognition state of the claim. Semantic recognition must be occurring in the wait state in order to determine which command was entered by the user, thereby determining which state the system should move to next, IE, 635, directory, or 540, calling. Therefore semantic recognition must be active when the time is being calculated in the wait state. When an input other than silence is recognized, the timer is of course stopped as the system moves out of the wait state.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
6. Claims 1-9, and 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art (APA) in view of Smith et al. (US PAP 2001/0047263).
7. Consider claim 1, the APA teaches a voice interactive method comprising:
- a) performing voice recognition upon an input voice signal to detect presence of a predetermined keyword (a confirmation procedure is required in the Talk-to-Talk mode when issuing a voice command. In the Talk-to-Talk mode, the confirmation procedure involves the presence of a keyword in the issued voice command so as to minimize occurrence of unwanted responses; spec page 3, lines 8-12.);
 - b) upon detecting that the input voice signal contains the predetermined keyword, performing semantic recognition upon the input voice signal (voice recognition is performed upon an input voice signal, and a responsive command is subsequently retrieved from a database based on the recognition result, spec page 2 lines 2-5. Talk to talk operates similarly as push to talk except a keyword is used; spec page 3, lines 7. Semantic analysis is inherent in the system of example of page 3 of talk-to-talk system.);
 - c) generating a response according to result of the semantic recognition performed in step b) (voice recognition is performed upon an input voice signal, and a

responsive command is subsequently retrieved from a database based on the recognition result, spec page 2 lines 2-5. Talk to talk operates similarly as push to talk except a keyword is used; spec page 3, lines 7.).

But the APA does not specifically teach:

d) simultaneous with step b), calculating an idle time between a current input voice signal and a previous input voice signal; and

e) disabling the semantic recognition of the input voice signal, and repeating step a) when the idle time calculated in step d) is larger than a predetermined threshold.

In the same field of voice control systems, Smith teaches:

d) simultaneous with step b), calculating an idle time between a current input voice signal and a previous input voice signal (Figure 6, the wait state, described paragraph 0060, of Smith is much the same as the semantic recognition state of the claim. Semantic recognition must be occurring in the wait state in order to determine which command was entered by the user, thereby determining which state the system should move to next, IE, 635, directory, or 540, calling. Therefore semantic recognition must be active when the time is being calculated in the wait state. Paragraph 0060 describes that this wait state will last a predetermined amount of time and if no input is received will revert the system to await another attention key word. As this wait state is entered only after a key word is recognized, the calculation of the idle time is based off of when the key was recognized, which is a previous voice signal.); and

e) disabling the semantic recognition of the input voice signal, and repeating step a) when the idle time calculated in step d) is larger than a predetermined threshold (if no

command is input by the user again within the predetermined amount of time (step 650), the system will go back to step 600 and await another attention word or key; paragraph 0060. The predetermined amount of time is the predetermined threshold).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the timing method of Smith with the voice control system of the APA in order to provide a mechanism to disable the semantic analysis when no response is given in order to prevent unwanted responses.

8. Consider claim 2, the APA teaches the voice interactive method as claimed in claim 1, wherein step c) includes: generating a signal corresponding to the result of the semantic recognition performed in step b), and transmitting the signal to an electronic device such that the electronic device operates in response to the signal received thereby (In the example, it is assumed that the system keyword is "Jack", and the electronic device that incorporates the voice interactive system is a multi-media playback apparatus: User: Jack, activate the CD player. System: All right, I'll activate the CD player for you; spec page 3, lines 18-24.).

9. Consider claim 3, the APA the voice interactive method as claimed in Claim 1, wherein step c) includes generating an artificial voice response corresponding to the result of the semantic recognition performed in step b) (In the example, it is assumed that the system keyword is "Jack", and the electronic device that incorporates the voice

interactive system is a multi-media playback apparatus: User: Jack, activate the CD player. System: All right, I'll activate the CD player for you; spec page 3, lines 18-24.).

10. Consider claim 4, Smith teaches the voice interactive method as claimed in claim 1, wherein step c) includes generating an image that corresponds to the result of the semantic recognition performed in step b) (FIGS. 10a-10f show example screen displays according to the present invention. FIG. 10a shows the basic screen display with the users selections to dial by name 100 or by number 200. The name list selection 300 allows the user to view the directory of names, such as the directory shown in FIG. 11. After an attention word is entered into the system, icon 300 shown in FIG. 10b is displayed on the screen to indicate to the user that the system is on and waiting for a command. Throughout processing the telephone call, icon 300 is displayed whenever it is time for user input; paragraph 0070.).

11. Consider claim 5, the APA teaches a selective voice recognition method comprising:

a) performing voice recognition upon an input voice signal to detect presence of a predetermined keyword (a confirmation procedure is required in the Talk-to-Talk mode when issuing a voice command. In the Talk-to-Talk mode, the confirmation procedure involves the presence of a keyword in the issued voice command so as to minimize occurrence of unwanted responses; spec page 3, lines 8-12.);

b) upon detecting that the input voice signal contains the predetermined keyword, performing semantic recognition upon the input voice signal (voice recognition is performed upon an input voice signal, and a responsive command is subsequently retrieved from a database based on the recognition result, spec page 2 lines 2-5. Talk to talk operates similarly as push to talk except a keyword is used; spec page 3, lines 7. Semantic analysis is inherent in the system of example of page 3 of talk-to-talk system.);

c) generating a response according to result of the semantic recognition performed in step b) (voice recognition is performed upon an input voice signal, and a responsive command is subsequently retrieved from a database based on the recognition result, spec page 2 lines 2-5. Talk to talk operates similarly as push to talk except a keyword is used; spec page 3, lines 7.).

But the APA does not specifically teach:

d) simultaneous with step b), calculating an idle time between a current input voice signal and a previous input voice signal; and

e) disabling the semantic recognition of the input voice signal, and repeating step a) when the idle time calculated in step d) is larger than a predetermined threshold.

In the same field of voice control systems, Smith teaches:

d) simultaneous with step b), calculating an idle time between a current input voice signal and a previous input voice signal (Figure 6, the wait state, described paragraph 0060, of Smith is much the same as the semantic recognition state of the claim. Semantic recognition must be occurring in the wait state in order to determine

which command was entered by the user, thereby determining which state the system should move to next, IE, 635, directory, or 540, calling. Therefore semantic recognition must be active when the time is being calculated in the wait state. Paragraph 0060 describes that this wait state will last a predetermined amount of time and if no input is received will revert the system to await another attention key word. As this wait state is entered only after a key word is recognized, the calculation of the idle time is based off of when the key was recognized, which is a previous voice signal.); and

e) disabling the semantic recognition of the input voice signal, and repeating step a) when the idle time calculated in step d) is larger than a predetermined threshold (if no command is input by the user again within the predetermined amount of time (step 650), the system will go back to step 600 and await another attention word or key; paragraph 0060. The predetermined amount of time is the predetermined threshold).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the timing method of Smith with the voice control system of the APA in order to provide a mechanism to disable the semantic analysis when no response is given in order to prevent unwanted responses.

12. Consider claim 6, the APA teaches a voice interactive system (a system is inherent in the APA in order to implement features below) comprising:

a detecting module adapted for performing voice recognition upon an input voice signal to detect presence of a predetermined keyword (a confirmation procedure is required in the Talk-to-Talk mode when issuing a voice command. In the Talk-to-Talk

mode, the confirmation procedure involves the presence of a keyword in the issued voice command so as to minimize occurrence of unwanted responses; spec page 3, lines 8-12.);

a semantic recognition module coupled to and controlled by said detecting module so as to switch operation from a disabled mode to an enabled mode, where said semantic recognition module performs semantic recognition upon the input voice signal, when the presence of the predetermined keyword in the input voice signal is detected by said detecting module (voice recognition is performed upon an input voice signal, and a responsive command is subsequently retrieved from a database based on the recognition result, spec page 2 lines 2-5. Talk to talk operates similarly as push to talk except a keyword is used; spec page 3, lines 7. Semantic analysis is inherent in the system of example of page 3 of talk-to-talk system.);

a response module coupled to and controlled by said semantic recognition module so as to generate a response according to result of the semantic recognition performed by said semantic recognition module (voice recognition is performed upon an input voice signal, and a responsive command is subsequently retrieved from a database based on the recognition result, spec page 2 lines 2-5. Talk to talk operates similarly as push to talk except a keyword is used; spec page 3, lines 7.).

But the APA does not specifically teach:

a timer module which operates simultaneously with operation of said semantic recognition module in the enabled mode so as to calculate an idle time between a

current input voice signal and a previous input voice signal, and so as to determine whether the idle time calculated thereby is larger than a predetermined threshold; and

a mode switching module coupled to said timer module and said detecting module, said mode switching module enabling said detecting module to switch operation of said semantic recognition module from the enabled mode back to the disabled mode upon detection by said timer module that the idle time between the current input voice signal and the previous input voice signal is larger than the predetermined threshold.

In the same field of voice control systems, Smith teaches:

a timer module which operates simultaneously with operation of said semantic recognition module in the enabled mode so as to calculate an idle time between a current input voice signal and a previous input voice signal, and so as to determine whether the idle time calculated thereby is larger than a predetermined threshold (Figure 6, the wait state, described paragraph 0060, of Smith is much the same as the semantic recognition state of the claim. Semantic recognition must be occurring in the wait state in order to determine which command was entered by the user, thereby determining which state the system should move to next, IE, 635, directory, or 540, calling. Therefore semantic recognition must be active when the time is being calculated in the wait state. Paragraph 0060 describes that this wait state will last a predetermined amount of time and if no input is received will revert the system to await another attention key word. As this wait state is entered only after a key word is

recognized, the calculation of the idle time is based off of when the key was recognized, which is a previous voice signal.); and

a mode switching module coupled to said timer module and said detecting module, said mode switching module enabling said detecting module to switch operation of said semantic recognition module from the enabled mode back to the disabled mode upon detection by said timer module that the idle time between the current input voice signal and the previous input voice signal is larger than the predetermined threshold (if no command is input by the user again within the predetermined amount of time (step 650), the system will go back to step 600 and await another attention word or key; paragraph 0060. The predetermined amount of time is the predetermined threshold).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the timing method of Smith with the voice control system of the APA in order to provide a mechanism to disable the semantic analysis when no response is given in order to prevent unwanted responses.

13. Consider claim 7, the APA teaches the voice interactive system as claimed in claim 6, wherein said response module includes an operation control module for generating a signal corresponding to the result of the semantic recognition performed by said semantic recognition module, said operation control module being adapted to transmit the signal generated thereby to an electronic device such that the electronic device operates in response to the signal (In the example, it is assumed that the system

keyword is "Jack", and the electronic device that incorporates the voice interactive system is a multi-media playback apparatus: User: Jack, activate the CD player. System: All right, I'll activate the CD player for you; spec page 3, lines 18-24.).

14. Consider claim 8, the APA teaches the voice interactive system as claimed in claim 6, wherein said response module includes a voice response module for providing artificial voice response data corresponding to the result of the semantic recognition performed by said semantic recognition module (In the example, it is assumed that the system keyword is "Jack", and the electronic device that incorporates the voice interactive system is a multi-media playback apparatus: User: Jack, activate the CD player. System: All right, I'll activate the CD player for you; spec page 3, lines 18-24.).

15. Consider claim 9, Smith teaches the voice interactive system as claimed in Claim 6, wherein said response module includes an image response module for providing image data that corresponds to the result of the semantic recognition performed by said semantic recognition module (FIGS. 10a-10f show example screen displays according to the present invention. FIG. 10a shows the basic screen display with the users selections to dial by name 100 or by number 200. The name list selection 300 allows the user to view the directory of names, such as the directory shown in FIG. 11. After an attention word is entered into the system, icon 300 shown in FIG. 10b is displayed on the screen to indicate to the user that the system is on and waiting for a command.

Throughout processing the telephone call, icon 300 is displayed whenever it is time for user input; paragraph 0070.).

16. Consider claim 12, the APA teaches a selective voice recognition system (a system is inherent in the APA in order to implement features below) comprising:

a detecting module adapted for performing voice recognition upon an input voice signal to detect presence of a predetermined keyword (a confirmation procedure is required in the Talk-to-Talk mode when issuing a voice command. In the Talk-to-Talk mode, the confirmation procedure involves the presence of a keyword in the issued voice command so as to minimize occurrence of unwanted responses; spec page 3, lines 8-12.);

a semantic recognition module coupled to and controlled by said detecting module so as to switch operation from a disabled mode to an enabled mode, where said semantic recognition module performs semantic recognition upon the input voice signal, when the presence of the predetermined keyword in the input voice signal is detected by said detecting module (voice recognition is performed upon an input voice signal, and a responsive command is subsequently retrieved from a database based on the recognition result, spec page 2 lines 2-5. Talk to talk operates similarly as push to talk except a keyword is used; spec page 3, lines 7. Semantic analysis is inherent in the system of example of page 3 of talk-to-talk system.);

a response module coupled to and controlled by said semantic recognition module so as to generate a response according to result of the semantic recognition

performed by said semantic recognition module (voice recognition is performed upon an input voice signal, and a responsive command is subsequently retrieved from a database based on the recognition result, spec page 2 lines 2-5. Talk to talk operates similarly as push to talk except a keyword is used; spec page 3, lines 7.).

But the APA does not specifically teach:

a timer module which operates simultaneously with operation of said semantic recognition module in the enabled mode so as to calculate an idle time between a current input voice signal and a previous input voice signal, and so as to determine whether the idle time calculated thereby is larger than a predetermined threshold; and

a mode switching module coupled to said timer module and said detecting module, said mode switching module enabling said detecting module to switch operation of said semantic recognition module from the enabled mode back to the disabled mode upon detection by said timer module that the idle time between the current input voice signal and the previous input voice signal is larger than the predetermined threshold.

In the same field of voice control systems, Smith teaches:

a timer module which operates simultaneously with operation of said semantic recognition module in the enabled mode so as to calculate an idle time between a current input voice signal and a previous input voice signal, and so as to determine whether the idle time calculated thereby is larger than a predetermined threshold (Figure 6, the wait state, described paragraph 0060, of Smith is much the same as the semantic recognition state of the claim. Semantic recognition must be occurring in the

wait state in order to determine which command was entered by the user, thereby determining which state the system should move to next, IE, 635, directory, or 540, calling. Therefore semantic recognition must be active when the time is being calculated in the wait state. Paragraph 0060 describes that this wait state will last a predetermined amount of time and if no input is received will revert the system to await another attention key word. As this wait state is entered only after a key word is recognized, the calculation of the idle time is based off of when the key was recognized, which is a previous voice signal.); and

a mode switching module coupled to said timer module and said detecting module, said mode switching module enabling said detecting module to switch operation of said semantic recognition module from the enabled mode back to the disabled mode upon detection by said timer module that the idle time between the current input voice signal and the previous input voice signal is larger than the predetermined threshold (if no command is input by the user again within the predetermined amount of time (step 650), the system will go back to step 600 and await another attention word or key; paragraph 0060. The predetermined amount of time is the predetermined threshold).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the timing method of Smith with the voice control system of the APA in order to provide a mechanism to disable the semantic analysis when no response is given in order to prevent unwanted responses.

17. Consider claim 13, the APA teaches a an electronic device (a device is inherent in the APA in order to implement features below) comprising:

a detecting module adapted for performing voice recognition upon an input voice signal to detect presence of a predetermined keyword (a confirmation procedure is required in the Talk-to-Talk mode when issuing a voice command. In the Talk-to-Talk mode, the confirmation procedure involves the presence of a keyword in the issued voice command so as to minimize occurrence of unwanted responses; spec page 3, lines 8-12.);

a semantic recognition module coupled to and controlled by said detecting module so as to switch operation from a disabled mode to an enabled mode, where said semantic recognition module performs semantic recognition upon the input voice signal, when the presence of the predetermined keyword in the input voice signal is detected by said detecting module (voice recognition is performed upon an input voice signal, and a responsive command is subsequently retrieved from a database based on the recognition result, spec page 2 lines 2-5. Talk to talk operates similarly as push to talk except a keyword is used; spec page 3, lines 7. Semantic analysis is inherent in the system of example of page 3 of talk-to-talk system.);

a response module coupled to and controlled by said semantic recognition module so as to generate a response according to result of the semantic recognition performed by said semantic recognition module (voice recognition is performed upon an input voice signal, and a responsive command is subsequently retrieved from a

database based on the recognition result, spec page 2 lines 2-5. Talk to talk operates similarly as push to talk except a keyword is used; spec page 3, lines 7.).

But the APA does not specifically teach:

a sound pickup module adapted for receiving an input voice signal (although it is practically inherent);

a timer module which operates simultaneously with operation of said semantic recognition module in the enabled mode so as to calculate an idle time between a current input voice signal and a previous input voice signal, and so as to determine whether the idle time calculated thereby is larger than a predetermined threshold; and

a mode switching module coupled to said timer module and said detecting module, said mode switching module enabling said detecting module to switch operation of said semantic recognition module from the enabled mode back to the disabled mode upon detection by said timer module that the idle time between the current input voice signal and the previous input voice signal is larger than the predetermined threshold.

In the same field of voice control systems, Smith teaches:

a sound pickup module adapted for receiving an input voice signal (figure 3, microphone 3274.)

a timer module which operates simultaneously with operation of said semantic recognition module in the enabled mode so as to calculate an idle time between a current input voice signal and a previous input voice signal, and so as to determine whether the idle time calculated thereby is larger than a predetermined threshold

(Figure 6, the wait state, described paragraph 0060, of Smith is much the same as the semantic recognition state of the claim. Semantic recognition must be occurring in the wait state in order to determine which command was entered by the user, thereby determining which state the system should move to next, IE, 635, directory, or 540, calling. Therefore semantic recognition must be active when the time is being calculated in the wait state. Paragraph 0060 describes that this wait state will last a predetermined amount of time and if no input is received will revert the system to await another attention key word. As this wait state is entered only after a key word is recognized, the calculation of the idle time is based off of when the key was recognized, which is a previous voice signal.); and

a mode switching module coupled to said timer module and said detecting module, said mode switching module enabling said detecting module to switch operation of said semantic recognition module from the enabled mode back to the disabled mode upon detection by said timer module that the idle time between the current input voice signal and the previous input voice signal is larger than the predetermined threshold (if no command is input by the user again within the predetermined amount of time (step 650), the system will go back to step 600 and await another attention word or key; paragraph 0060. The predetermined amount of time is the predetermined threshold).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the timing method of Smith with the voice control system of

the APA in order to provide a mechanism to disable the semantic analysis when no response is given in order to prevent unwanted responses.

18. Consider claim 14, the APA teaches the voice interactive system as claimed in claim 13, wherein said response module includes an operation control module for generating a signal corresponding to the result of the semantic recognition performed by said semantic recognition module, said operation control module being adapted to transmit the signal generated thereby to an electronic device such that the electronic device operates in response to the signal (In the example, it is assumed that the system keyword is "Jack", and the electronic device that incorporates the voice interactive system is a multi-media playback apparatus: User: Jack, activate the CD player. System: All right, I'll activate the CD player for you; spec page 3, lines 18-24.).

19. Consider claim 15, the APA teaches the voice interactive system as claimed in claim 13, wherein said response module includes a voice response module for providing artificial voice response data corresponding to the result of the semantic recognition performed by said semantic recognition module (In the example, it is assumed that the system keyword is "Jack", and the electronic device that incorporates the voice interactive system is a multi-media playback apparatus: User: Jack, activate the CD player. System: All right, I'll activate the CD player for you; spec page 3, lines 18-24.).

20. Consider claim 16, Smith teaches the voice interactive system as claimed in claim 13, wherein said response module includes an image response module for providing image data that corresponds to the result of the semantic recognition performed by said semantic recognition module (FIGS. 10a-10f show example screen displays according to the present invention. FIG. 10a shows the basic screen display with the users selections to dial by name 100 or by number 200. The name list selection 300 allows the user to view the directory of names, such as the directory shown in FIG. 11. After an attention word is entered into the system, icon 300 shown in FIG. 10b is displayed on the screen to indicate to the user that the system is on and waiting for a command. Throughout processing the telephone call, icon 300 is displayed whenever it is time for user input; paragraph 0070.).

21. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over the APA in view of Smith as applied to claim 6 above, and further in view of Bellegarda et al (US Patent 6,285,785).

22. Consider claim 10, APA and smith teaches the voice interactive system as claimed in claim 6, but does not specifically teach wherein said detecting module includes:

a feature parameter retrieving unit for retrieving feature parameters of the input voice signal;

a voice model building unit coupled to said feature parameter retrieving unit for building voice models with reference to the feature parameters retrieved by said feature parameter retrieving unit;

a keyword voice modeling unit for storage of keyword voice models; and

a voice model comparing unit coupled to said voice model building unit and said keyword voice modeling unit for comparing similarity among built voice models and the keyword voice models.

In the same field of speech recognition, Bellegarda teaches:

a feature parameter retrieving unit for retrieving feature parameters of the input voice signal (With the use of a microphone and A/D converter as the speech transducer 22 the speech is typically sampled at a 20 kHz rate and is Fast Fourier transformed; column 6, line 46.);

a voice model building unit coupled to said feature parameter retrieving unit for building voice models with reference to the feature parameters retrieved by said feature parameter retrieving unit (The role of the Markov word model for speech is to represent the pronunciation of a word. The parameters of the Markov model are trained by relating the acoustic signal produced by the speaker to the word uttered; column 7, line 50.);

a keyword voice modeling unit for storage of keyword voice models (inherent if combined with APA and smith. In order to apply Markov models to the keyword, a modeling unit is inherent.); and

a voice model comparing unit coupled to said voice model building unit and said keyword voice modeling unit for comparing similarity among built voice models and the

keyword voice models (For speech, the likelihood of each Markov word model producing the input utterance is computed, after pruning by the 3-gram LM 38a, and those words resulting in the highest scores are placed on the list of word candidates (L.sub.1). In both cases (speech and handwriting), the size of the list is preferably statically set using a predetermined reasonable maximum size, such as 15, or may be set dynamically using a threshold. In the latter case, all words whose likelihoods fall within the selected threshold are maintained on the list, and the other words discarded; column8, lines 48-58.).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the modeling system of Bellegarda with the voice recognition system in order to provide a robust method to enable word recognition.

23. Consider claim 11, Bellegarda teaches the voice interactive system as claimed in Claim 10, wherein said semantic recognition module includes a database containing a plurality of voice model samples, and a voice model comparing unit coupled to said detecting unit similarity among said database for comparing the built voice models and the voice model samples (For speech, the likelihood of each Markov word model producing the input utterance is computed, after pruning by the 3-gram LM 38a, and those words resulting in the highest scores are placed on the list of word candidates (L.sub.1). In both cases (speech and handwriting), the size of the list is preferably statically set using a predetermined reasonable maximum size, such as 15, or may be set dynamically using a threshold. In the latter case, all words whose likelihoods fall

within the selected threshold are maintained on the list, and the other words discarded; column8, lines 48-58. In order to do this, a database must be used in order to provide the models to prune from.).

Conclusion

24. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Douglas C. Godbold whose telephone number is (571) 270-1451. The examiner can normally be reached on Monday-Thursday 7:00am-4:30pm Friday 7:00am-3:30pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached on (571) 272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Application/Control Number:
10/781,880
Art Unit: 2626

Page 25

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DCG


PATRICK N. EDOUARD
SUPERVISORY PATENT EXAMINER